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Developing core economic outcome sets for asthma studies: a protocol for a systematic review

Natalia Hounsome,[1] Deborah Fitzsimmons,[2] Ceri Phillips,[2] Anita Patel[1]

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[1]Asthma UK Centre for Applied Research, Centre of Primary Care and Public Health, Queen Mary University of London, London, UK
[2]Asthma UK Centre for Applied Research, Swansea Centre for Health Economics, Swansea University, Swansea, UK

Correspondence to
Dr Natalia Hounsome;
n.hounsome@qmul.ac.uk

ABSTRACT

Introduction Core outcome sets are standardised lists of outcomes, which should be measured and reported in all clinical studies of a specific condition. This study aims to develop core outcome sets for economic evaluations in asthma studies. Economic outcomes include items such as costs, resource use or quality-adjusted life years. The starting point in developing core outcome sets will be conducting a systematic literature review to establish a preliminary list of reporting items to be considered for inclusion in the core outcome set.

Methods and analysis We will conduct literature searches of peer-reviewed studies published from January 1990 to January 2017. These will include any comparative or observational studies (including economic models) and systematic reviews reporting economic outcomes. All identified economic outcomes will be tabulated together with the major study characteristics, such as population, study design, the nature and intensity of the intervention, mode of data collection and instrument(s) used to derive an outcome. We will undertake a 'realist synthesis review' to analyse the identified economic outcomes. The outcomes will be summarised in the context of evaluation perspectives, types of economic evaluation and methodological approaches. Parallel to undertaking a systematic review, we will conduct semistructured interviews with stakeholders (including people with personal experience of asthma, health professionals, researchers and decision makers) in order to explore additional outcomes which have not been considered, or used, in published studies. The list of outcomes generated from the systematic review and interviews with stakeholders will form the basis of a Delphi survey to refine the identified outcomes into a core outcome set.

Ethics and dissemination The review will not involve access to individual-level data. Findings from our systematic review will be communicated to a broad range of stakeholders including clinical guideline developers, research funders, trial registries, ethics committees and other regulators.

Strengths and limitations of this study

- This systematic review represents a key step in standardising economic outcomes in asthma trials.
- We will produce a list of economic outcomes for use in future studies.
- We will involve stakeholders in review of findings.
- Quality of studies included in the systematic review will be not assessed given the scope of this study.
- Economic outcomes identified in this review (eg, resource use) may be not comparable to other countries and settings due to differences in healthcare organisation.

INTRODUCTION

Core outcome measures are standardised sets of outcomes, which represent the minimum set of parameters that should be measured and reported in all clinical studies of a specific condition.[1] The purpose of developing core outcome sets is to enable the results of these studies to be compared, contrasted and combined as appropriate. Including core outcome sets in future studies will help to reduce heterogeneity between reported outcomes, facilitate evidence synthesis and minimise the risk of outcome reporting bias. Core outcomes should be relevant to health service users, people making decisions about healthcare, research funders, clinical guideline developers and other regulators.

In 2010, the Core Outcome Measures in Effectiveness Trials (COMET) Initiative was launched by the MRC North West Hub for Trials Methodology (NWHTMR).[1] The COMET Initiative brings together academics, clinical researchers, research funders, health service users, policy-makers and trial regulators interested in developing and using standardised sets of outcome measures. Currently, there is no such set for asthma in the UK and a range of reviews have identified a large variety of outcomes used to evaluate the clinical effectiveness and cost-effectiveness of healthcare interventions for people with asthma.[2–6]

While there has been a more general move towards the standardisation of measures for economic evaluation,[7–9] within the asthma field, the focus has tended to be in the context of effectiveness (rather than costs) as the purpose of many new treatment

strategies is better control and avoidance of unscheduled healthcare use resulting from poor control. We, therefore, wanted to turn attention in this area specifically to economic outcomes. Aside from resource use and cost measures (eg, use of primary care services, hospital admissions, emergency department and outpatient visits, tests, investigations, medication and absence from work and school), another type of outcome that could be considered 'economic' is preference-based measures of health-related quality of life, such as quality-adjusted life years (QALYs), which are usually measured specifically to inform cost-effectiveness decisions at the health system level.

The starting point in developing core outcome sets is to conduct a systematic review to determine what outcomes are already in use and to establish a preliminary list of reporting items to be considered for inclusion in the core outcome set.[10 11] We therefore present here a protocol for a systematic review of studies of asthma that report economic outcomes.

METHODS AND ANALYSIS

The systematic review will be conducted using methodology described in the Cochrane Handbook for Systematic Reviews of Interventions,[12] and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[13]

Aims and objectives

The aim of this systematic review is to identify, evaluate and explain economic outcomes reported in studies of healthcare interventions for people with asthma.

The objectives of this systematic review are as follow:

- To identify, obtain and review relevant studies.
- To identify economic outcomes used in asthma studies.
- To develop lists of economic outcome measures used for adults, children and adolescents.

Definitions

For the purpose of this review, we will use the following definitions:

Economic outcomes are economic results or consequences of an intervention. These can be associated with resources (eg, number of prescriptions or days in hospital), costs, preference-based measurements of health-related quality of life, such as QALYs, combined metrics of costs and outcomes (eg, incremental cost-effectiveness ratio, net benefit or probability of intervention being cost-effective) or compliance (poor compliance is associated with a waste of resources).

Economic outcome measures are tools (both validated and non-validated) through which economic outcomes are assessed, for example, resource use questionnaires, outcome measures and proformas.

Inclusion criteria

Types of studies

Any controlled and uncontrolled experimental and observational studies and reviews of economic outcomes published in English language.

Types of interventions

1. Interventions designed to improve diagnosis, investigation, treatment, monitoring or management of asthma.
2. Interventions to improve services and their delivery for people with asthma.
3. Public heath interventions for asthma prevention.

Participants

Adults, children and adolescents with confirmed asthma diagnosis will be the participants. We will include studies with children aged ≥5 years due to the challenge of objective confirmation of asthma diagnosis in children <5 years.[14–16] We will also exclude studies including patients with late asthma diagnosis (>50 years), as these are more likely to have a COPD–asthma overlap syndrome.[17]

Settings

We will place no restrictions regarding setting of care.

Types of economic evaluations

We will place no restrictions on types of health economics analyses.

Literature search

A literature search will be conducted in two stages. The first step will be conducted using the following sources: COMET database for core outcomes in clinical trials, Cochrane Library, HTA library, NHS EED, DARE, PubMed, EMBASE, PsycINFO, Web of Science, EconLit and CINAHL. In the second step, we will use a 'snowballing approach', whereby reference lists and bibliographies of review articles will be searched for original studies which were not picked up by database searches. Database searches will include studies published from January 1990 to January 2017 due to the small number of economic evaluations published before 1990. Titles and abstracts of articles will be searched using terms related to asthma, economic(s) and outcomes. Examples of search strategies are included in online supplementary appendix 1. We will not search grey literature as this may lead to the double-counting of studies (eg, in conference papers and journal articles).

Selecting studies

To minimise the possibility of selection bias, two reviewers will be involved in the selection process. Initial screening will include titles and abstracts. The title/abstract screening checklist is shown in online supplementary appendix 2. In the second step, each reviewer will independently read each of the studies that can potentially be included in the review. Any discrepancies regarding whether a study is relevant for inclusion in the review will be resolved by open discussion to reach a consensus. A PRISMA diagram will be drawn to describe the selection

process.[18] Given the scope of this review, we will not assess the quality of the included studies. However, we will exclude poorly reported studies which do not provide sufficient information about economic outcomes for our analyses.

Data extraction

All identified economic outcomes will be tabulated together with the major study characteristics, such as population, study design, mode of data collection, the nature and intensity of the intervention and other outcome measures. The design of the table will be developed in due course. An example of an extraction table is shown in online supplementary appendix 3.

Data synthesis

Data will be synthesised according to the guidelines for synthesising qualitative research for health technology assessments and systematic reviews.[19] Due to the scope of the review, neither a qualitative or quantitative data synthesis will produce meaningful results so, for the purpose of this study, we will undertake a realist synthesis approach.[20 21] This method is increasingly used in evidence-based research since it applies to the real world of policy formation. Realist synthesis goes beyond creating a list of economic outcomes used in asthma studies. It accounts for context, questions outcome integrity and compares expectations (what was intended to be measured) with practice (what was actually measured). We will be answering the following key questions: What type of outcome? In what studies? How measured? Does it answer the economic research question? Is it useful for decision makers? The process of realist synthesis is described in online supplementary appendix 4. We will summarise economic outcomes included in asthma studies in the context of population age (eg, children 5–11 years, adults and adolescents 12+ years); evaluation perspectives (eg, societal, healthcare provider, personal social services and so on); types of economic evaluation (eg, cost-effectiveness, cost-utility, cost-consequences and cost-benefit analysis) and methodological approaches (eg, retrospective or prospective and data sources).

ETHICS AND DISSEMINATION

We did not seek ethical approval for conducting the systematic review as it will not involve access to individual-level data. Formal ethics approval will be sought to conduct interviews and Delphi studies with stakeholders.

Findings from our systematic review will be communicated to a broad range of stakeholders. We will work in close conjunction with the Asthma UK Centre for Applied Research (AUKCAR; http://www.aukcar.ac.uk/), which brings together the leading asthma researchers from 13 universities across the UK, Asthma UK, people affected by asthma, NHS partners and other organisations. We will disseminate our findings at international workshops and conferences, including COMET meetings.

The next step, of developing an economic core outcome set for studies focusing on people with asthma, will involve Delphi methodology to determine which economic outcomes should be included in effectiveness studies.[10 11] Findings from this systematic review will inform protocol development for the Delphi consensus process. A national expert panel will be convened for round-table discussions to a group of experts from the Asthma UK Centre for Applied Research. The panel will include representatives from the AUKCAR Patient Advisory Group, consisting of people with mild to severe and brittle asthma, as well as parents, relatives and carers of people with asthma, to identify important economic outcomes. Once a consensus on an outcome set is reached, an international workshop will be convened to discuss the applicability of the Delphi-generated core outcome set across international settings and relevant disciplines. Subsequent developments of the core outcome set will be validated internally (via a further expert panel) and externally (by including in national/international asthma studies). To ensure uptake of the core outcome set, we will engage with clinical guideline developers, research funders, trial registries, ethics committees and other regulators.

Contributors NH: led the development of the protocol, wrote the first draft and integrated comments from coauthors. AP, DF and CH: critically revised the manuscript and provided methodological input. AP: provided intellectual leadership to the project.

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Competing interests None declared.

Patient consent This is a protocol for a systematic literature review. It does not involve patients.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement This is a protocol for a systematic literature review. No additional unpublished data are available at the moment.

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